

## **Invitation for Comment on Prospective Candidates to the UST/RCRA BCI Review Panel**

The EPA Science Advisory Board (SAB, Board) announced in 66 FR 44343-44344, August 23, 2001, that it has been asked to undertake a review of the Underground Storage Tanks (UST) Cleanup and Resource Conservation Recovery Act (RCRA) Subtitle C Program Benefits, Costs and Impacts. The Board invited nominations for consideration on the review panel being formed. The SAB's process for panel formation has been designed for three purposes: to help the Board meet EPA's legal requirements; to be transparent to the public, so the public can understand and participate in the process; and to help the Board fulfill its mission. Approximately 2-dozen nominations were received in response to the Federal Register announcement. Coupled with nominees from other sources (Agency, SAB members, and SAB Staff), approximately 120 candidates were identified as viable for further consideration. This list now has been narrowed down to 19 candidates, based upon interest, availability, credentials, expertise needed, etc. of which approximately 10 candidates will be selected for this review. Five of the nineteen candidates on the current list were suggested through the Federal Register nomination process. The background, charge, and description of the review documents appear in the above referenced Federal Register notice, and are also available on the SAB website ([www.epa.gov/sab](http://www.epa.gov/sab)).

Brief biographical sketches of the 19 candidates on the current "Short-List" are listed below for public comment. We invite comments from the public to provide the Board with information, analysis, or documentation that the Board should consider in evaluating the remaining candidates. This information plays an important part in determining the panel members chosen during the "Panel Selection" Phase.

The SAB Staff Director, in consultation with SAB leadership, as appropriate, makes the final decision about who will serve on the panel in the "Panel Selection" phase. In that phase, SAB Staff completes its review of information regarding conflicts of interest, appearance of impartiality, and appropriate balance and breadth needed to address the charge. They review all the information provided by the candidates, along with any information that the public may provide in response to the posting of information about the prospective panel on the SAB website during the "Short List Phase," and information gathered by SAB Staff independently on the background of each candidate. SAB Staff document the rationale underlying the selection of each panel in a "Panel Selection" document.

Please provide any advice, observations or comments you might think would be helpful in selecting the final candidates no later than April 10, 2002. Please submit comments to the attention of Dr. K. Jack Kooyoomjian, Designated Federal Officer, UST/RCRA BCI Review Panel, U.S. EPA Science Advisory Board (1400A), 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Comments sent via E-mail are preferred – please send them to: [kooyoomjian.jack@epa.gov](mailto:kooyoomjian.jack@epa.gov). We intend to make final selections no later than April 15, 2002.

The dates for the meetings on this topic will be formally announced in the Federal Register. They include a conference call from 3:00 - 5:00 pm eastern standard time on Thursday, May 9, 2002 to discuss the charge and the adequacy of the review materials to assist the Panel in answering the charge; a face-to-face review meeting in Washington, DC on Monday

May 20 through Tuesday, May 21, 2002; and a contingency (if needed) conference call to wrap up edits on Tuesday, June 18, 2002 from 2:00 - 4:00 pm eastern standard time.

### **Brief Bios of Candidates to the UST/RCRA BCI Review Panel (the “Short-List”)**

**Dr. Bruce Bauman** is the soil and groundwater research program coordinator in the Regulatory Analysis and Scientific Affairs department at the American Petroleum Institute (API) in Washington, DC. He manages a broad technical research program addressing groundwater impacts from motor fuel releases. Since 1990 he has served as API’s technical program coordinator for the annual API-National Ground Water Association ‘Hydrocarbons in Groundwater’ Conference. He is a member of the editorial board of the *Journal of Soil Contamination* since 1996. From 1992 to 1995 Dr. Bauman was a Consultant to the EPA Science Advisory Board’s Environmental Engineering Committee’s Underground Storage Tank (UST) Research Subcommittee during the time that it generated [Review of the Underground Storage Tank (UST) Research Program, EPA-SAB-EEC-93-008].

Dr. Bauman received his Ph.D. in Soil Science with a minor in water resources from Montana State University, and a B.S. in soil science from the University of Wisconsin-Madison.

**Dr. Richard Belzer** is President of Regulatory Checkbook, a 501(c)(3) nonprofit organization established in 2001 to perform independent oversight of federal regulatory agencies. In addition to and separate from his nonprofit work, in the past year he has delivered a presentation on regulatory oversight to staff of the American Chemistry Council; a plenary presentation at the 2001 annual meeting of the International Society of Exposure Analysis; taught portions of a course on risk assessment for the Mercatus Center’s Capitol Hill Campus; organized a symposium on Executive regulatory review for the Weidenbaum Center on Business, the Economy, and Public Policy; and has provided economics and risk-related consulting services for ExxonMobil and Intertox. From 1998-2001, Dr. Belzer was a visiting professor of public policy at Washington University in St. Louis, and regulatory program manager for the University’s Center for the Study of American Business.

These activities followed a 10-year career at the Office of Management and Budget’s Office of Information and Regulatory Affairs where he reviewed dozens of Regulatory Impact Analyses prepared by or for EPA and other federal agencies. He made substantial contributions to two specifically relevant OMB publications: “Regulatory Impact Analysis Guidance” (1990) “Economic Analysis of Federal Regulations Under Executive Order 12866” (1996). He has published articles and book chapters on various related topics including regulatory oversight, benefit-cost analysis, risk perception, risk management, intergenerational discounting, and contingent valuation methods. He is a member of the American Economic Association and the Society for Risk Analysis, and was elected Treasurer of the SRA in 1998 and reelected in 2000.

Dr. Belzer holds a doctorate in Public Policy from Harvard University, a master’s degree in Public Policy from Harvard’s Kennedy School of Government, and MS and BS degrees in Agricultural Economics from the University of California at Davis.

**Dr. James Boyd:** is a Senior Fellow at Resources for the Future (RFF), and is currently Director of the Energy and Natural Resources Division, having served as a Fellow at RFF from 1992-2000. He has been a visiting professor, teaching business strategy in the legal and regulatory environment in the Olin School of Business (1997) at Washington University in St. Louis, and

was a lecturer in managerial economics and public policy at the Wharton Business School at the University of Pennsylvania (1991 & 1992). His primary research interests are in the areas of law and economics, environmental policy and regulatory economics. He has published articles dealing with such topics as environmental liability law, financial responsibility for environmental obligations, benefit-based transfer ratios to assess compensation for lost ecosystem services, analysis of conservation easements, barriers to and opportunities for corporate pollution prevention, the economics of negotiated regulatory rulemaking, and numerous other topics.

Dr. Boyd received his Ph.D. in Applied Microeconomics from the Wharton Business School, University of Pennsylvania and his B.A. in History from the University of Michigan.

**Dr. Gardner M. Brown, Jr.** is Professor of Economics at the University of Washington, Seattle since 1965. He has held numerous appointments as visiting scholar, visiting professor, visiting research fellow, and exchange professor over the years. He just had accepted for publication an article dealing with a market solution for preserving biodiversity relating to the black rhino. He has co-authored textbooks dealing with the topics of preservation and valuation of biological resources, the economics of ocean resources, waterfowl and wetlands, and cleaning up Europe's waters (dealing with economics, management, and policies). He has published articles dealing with such topics as global climate change, social cost and evolution of antibiotics, renewable natural resource management, economics of the endangered species act, the marginal cost of species preservation, natural resource damage assessment, estimating the cost of oil spills, economic valuation of shoreline, pricing seasonal recreational services, the price and output of public services, methods of valuing acidic deposition and air pollution effects, optimal harvest policies in a predator-prey system, choice of tools in environmental problems, and other related topics.

Dr. Brown is Associate Editor of the *Journal of Environmental Economics and Management* and serves on the editorial boards of the *Journal of Marine Resource Economics*, the *Journal of Environmental and Development Economics* and the *International Journal of Agricultural Economics, Governance and Ecology*. He has served as a member and currently is a consultant to the Science Advisory Board. He has served as a consultant to NOAA, U.S. AID, the World Bank and other organizations. He has served on the SAB's Health and Ecological Effects Subcommittee (HEES) of the Council in review of the CAA Section 812 Benefit-Cost Study, the SAB's Task Force on Global Biodiversity (1988-1990), the National Research Council (NRC) Committee for Review of the Outer Continental Shelf (Socio-Economics Panel), a Member of the American Economic Association Liaison Committee, a member of the NRC/NAS Committee on Endangered Species, and a member of the NRC/NAS Cumulative Environmental Effects of Oil and Gas activities on Alaska's North Slope

He received his Ph.D. and MA in Economics from the University of California, Berkeley, and his AB from Antioch College.

**Dr. Gilles Bussod** is a hydrogeologist with broad experience in Earth Sciences who is currently President of a small consulting firm, Science Network International, Inc., which brings together scientists, engineers, academics and private consultants to solve problems in water resources and waste management. He is also currently associated with the Environmental Restoration Program at Los Alamos National Laboratory. He was the principal investigator for field testing the validation of radionuclide transport laboratory data for the Yucca Mountain Project. He was

also the Principal Investigator for designing and setting up a multi-million dollar monitoring testing program in Los Alamos Canyon to track the effects of a destroyed watershed on contaminant transport in the groundwater system at Los Alamos. He has authored or co-authored numerous publications dealing with unsaturated zone transport, comparing data to model predictions, radionuclide transport, assessment of thermomechanical properties in porous media, unsaturated-zone tracer testing and a variety of related topics. He holds a patent for a rock-melting tool. He currently is a member of the SAB's Radiation Advisory Committee. He has served on the European Science Foundation Organizing Committee for the Euroconference on deformation processes in minerals, ceramics and ionic crystals, as well as Session Chair at other conferences in this general topical area. He was also involved in meetings to develop a strategy for waste disposition and management in Europe, through the auspices of OECD Geotrap /ANDRA and spearheaded a DOE water resources project in the Middle East. Finally, in 1998, he participated in the Mena-Doha Economic Summit Conference, in Doha, Qatar, as an American delegate member to the US Secretary of State Madeleine Albright.

Dr. Bussod received his Ph.D. in Geology at UCLA, and his Diplôme d'Habilitation à Diriger des Recherches (Doctorate Thesis in the Study of natural and synthetic materials) from the Université de Paris, France. He also holds an M.Sc. in Geology, a B.S. in Geology and a B.S. in Oceanography from the University of Washington, Seattle.

**Dr. George Carpenter** is currently employed in the Superfund Section of the Environmental Response Division of the Michigan Department of Environmental Quality. Dr. Carpenter has extensive state experience dealing with topics such as environmental contamination site impact assessments, contamination site remedial action selection, presumptive remedies, innovative technologies, remote sensing, evaluation of site assessment ranking models, quality assurance review of sites, site inspections, NPL scoring, evaluating the impacts of toxic substances on aquatic life and public health, and recommending effluent limits for organic chemicals in industrial and public wastewater treatment system discharges. In the private sector, he has experience as a laboratory manager for acute and chronic sediment bioassays of specific chemicals, industrial discharges, and other point source pollution using fish, invertebrates and algae. He also conducted zooplankton and plankton standing crop studies on many of the Great Lakes. He has authored or co-authored publications spanning many of the above topics. He served as a consultant(4 years) and member (6 years) of the Science Advisory Board's (SAB) Environmental Engineering Committee (EEC) from 1987 to 1997. He Chaired a Constructed Wetland Review Subcommittee for the SAB's EEC (Research-in Progress-Review of ORD's "Constructed Wetlands for Wastewater Treatment," EPA-SAB-EEC-LTR-92-006), which was jointly conducted with the SAB's Environmental Processes and Effects Committee (EPEC) review of wetlands ecology. His experience with the SAB includes numerous groundwater reviews, including several groundwater contaminant transport models, database development plans, pollution prevention policy, redesign of the Hazard Ranking System for environmental contamination sites, evaluation of the Agency's municipal solid waste program, and evaluation of the Superfund Innovative Technology Evaluation (SITE) program.

He received his Ph.D. in Fisheries and Wildlife from Michigan State University, an M.S. in Limnology and Biology from McGill University, and B.A. in Zoology and Botany from Wabash College.

**Dr. Ronald G. Cummings** is currently the Noah Langdale Jr. Professor of Environmental Policy

at Georgia State University, as well as an Adjunct Professor at Albany State University. He was a Professor of Economics at the University of New Mexico (1975-93), Department Chairman and Professor in the Department of Resource Economics at the University of Rhode Island (1972-75), Program Director, Mexico City, for Resources for the Future, Inc. (1969-72), and Assistant Professor of Economics and Agriculture Economics at Montana State University (1967-69). He was awarded the Distinguished Service Award by the Association of Environmental and Resource Economists in 1991, and was appointed to the New Mexico Eminent Scholar Program by the New Mexico Commission on Higher Education in 1989. Professor Cummings served as President of the Association of Environmental Resource Economists in 1983, and was a member of its Board of Directors in 1981 and from 1987 to 1996. He served as a member of the Executive Committee, Section on Hydrology, of the American Geophysical Union (1983-1987). Professor Cummings served as Policy Sciences Editor for *Water Resources Research* between 1984-87, and as the Managing Editor for the *Journal of Environmental Economics and Management* from 1987 to 1996. He has served on study panels for the National Academy of Sciences and the National Research Council Panel, and the EPA's Science Advisory Board Clean Air Act Compliance Analysis Council. He has served on the editorial boards or advisory councils for the *Natural Resources Journal*, *Environment and Development Economics*, *Land Economics*, and *Southwestern Review of Management and Economics*. He has served on a number of state and federal study groups/task forces regarding hazardous waste, nuclear waste disposal, materials management, and water resources.

Dr. Cummings has a Ph.D. in Economics from the University of Kansas, and an M.S. and B.S. in Economics from the University of Missouri.

**Dr. A. Myrick Freeman** is the William D. Shipman Research Professor of Economics at Bowdoin College, where he has been on the faculty since 1965 and has served as Chair of the Economics Department, as well as Director of the Environmental Studies Program. He has also held appointments as Visiting Professor at the University of Washington, and the Robert M. La Follette Distinguished Visiting Professor at the University of Wisconsin-Madison and as a Senior Fellow at Resources for the Future, a research organization in Washington, DC.

Dr. Freeman's principal interests are in the areas of applied welfare economics, benefit-cost analysis, and risk management as applied to the development of models and techniques for estimating the welfare effects of environmental changes, such as the benefits of controlling pollution and the damages to natural resources due to releases of chemicals into the environment. Dr. Freeman has authored or co-authored eight books, including *The Economics of Environmental Policy* (with Robert Haveman and Allen Kneese), *The Benefits of Environmental Improvement: Theory and Practice*, *Air and Water Pollution Control: A Benefit-Cost Assessment*, and most recently *The Measurement of Environmental and Resource Values: Theory and Methods*. He has also published more than 70 articles and papers in academic journals and edited collections.

Dr. Freeman is presently a consultant to the SAB, having served as a member of the Advisory Council on Clean Air Compliance Analysis (the Council), as well as a member of the Environmental Economics Advisory Committee (EEAC).

Dr. Freeman received his Ph.D. and M.A. in Economics from the University of Washington, and his A.B. in Economics from Cornell University.

**Mr. J. Andrew Hagelin** is Director for Spill Response and Remediation for

the Virginia Department of Environmental Quality (DEQ) and Administrator of the Virginia Petroleum Storage Tank Fund. As such he is responsible for the Virginia programs which regulate underground and aboveground tanks, oversee cleanups of petroleum releases, and review claims and make reimbursement payments related to those cleanups. He also coordinates the Virginia DEQ's response to pollution incident reports and emergency operations planning. His Department has been recognized for practical procedural innovations by EPA Region III.

While working in the private sector, Mr. Hagelin was a project manager and lead analyst providing technical support and quality control to the U.S. Department of Energy (DOE) Office of Environmental Restoration and Waste Management. Support included assistance in the areas of risk assessment, environmental regulatory compliance (CERCLA, RCRA, CWA, etc.) hazardous waste management and TSD facility operation, pollution prevention, site remediation, occupational health and safety, public participation, emergency planning and preparedness, and incident/occurrence and evaluation at the Department's nuclear weapons production facilities.

Mr. Hagelin has a B. S. in Engineering Management from the U.S. Naval Academy and served for 9 years in the United States Navy.

**Dr. W. Michael Hanemann** is Chancellor's Professor of Agricultural and Resource Economics and Public Policy at the University of California, Berkeley. He has worked on water resource economics since his days in graduate school at Harvard in 1970, working on the economics of water supply and wastewater disposal, and the economic valuation of water resources and water pollution. From 1986 to 1989 he served as the economics staff for the California State Water Resources Control Board. He has also served on a Blue Ribbon Panel for the Mayor of Los Angeles on designing the water rate schedule for LA, as well as a Blue Ribbon Panel on water pricing for the Metropolitan Water District of Southern California. He has been a consultant to the Urban Water Conservation Council of California and has co-authored three reports on water rate design and assessment of water conservation.

Dr. Hanemann is widely published, having authored or co-authored over 30 refereed articles, over 30 research reports, nearly 30 contributions to books, a number of books and monographs, and over 40 working papers dealing with economics and environmental issues.

Dr. Hanemann has served as a teaching fellow in the Department of Economics at Harvard University, a Lecturer in the Department of Economics at Northeastern University, a staff Economist and Consultant at Urban Systems Research in Cambridge, Massachusetts, and other teaching and consulting appointments. He was a member of the United Nations Environmental Program (UNEP) Working Group on Benefits of Biodiversity Conservation, a University Fellow at Resources for the Future, a Member of the Board of Directors for the Association of Environmental & Resource Economists, and a Member of the National Research Council (NRC) Committee to Review the Glen Canyon Environmental Studies Program and the NRC's Committee on Wolf and Bear Control in Alaska.

Dr. Hanemann received his Ph.D. in Economics and his M.A. in Public Finance and Decision Theory from Harvard University, a M.Sc. in Development Economics from the London School of Economics, and a B.A. in Philosophy, Politics and Economics from Oxford University in England.

**Dr. Hilary I. Inyang** is the Duke Energy Distinguished Professor of Environmental Engineering and Science in the Civil Engineering Department, Professor of Earth Science and Director of the Global Institute for Energy and Environmental Systems at the University of North Carolina,

Charlotte. Prior to this, he had been the DuPont Young Professor and Director of the Center for Environmental Engineering, Science and Technology at the University of Massachusetts at Lowell and Professor of the University of Massachusetts Graduate School of Marine Science and Technology. Prof. Inyang is also active in national and international environmental policies on sustainable development, global change, natural hazards mitigation and energy resources. His research focuses on fundamental aspects of soil-contaminant interactions with geomaterials under various physico-chemical applications, such as both theoretical and applied aspects of material deterioration processes, contaminant interactions and waste disposal/containment systems, barrier deterioration processes, gamma ray generation from radioactive wastes and their transport through media, reliability modeling, micro-imaging and monitoring of damage accumulation in materials and constructed systems, and mechanics of excavation of underground space for energy facilities and nuclear waste disposal, contaminant leachability, and mechanical excavation processes for underground space for energy storage and waste management and related topics. He has authored or co-authored more than 100 research articles, design manuals, book chapters and reports on waste containment systems, remediation technologies and underground space. He is an associate editor/editorial board member of eight refereed international journals, including the *Journal of Soil and Sediment Contamination*, *ASCA Journal of Environmental Engineering* and the *International Journal of Integrated Waste Management, Science and Technology* (Waste management). Since 1999 he has served as the Honorary Theme Editor of the Environmental Monitoring Section of the United Nations Encyclopedia of Life Support Systems. He is co-author of the textbook - Geoenvironmental Engineering: Principles and Applications, as well as technical guidance manuals that have been used by agencies, including the U.S. EPA. In addition to service on more than 50 federal, state and international science/engineering panels and committees, he has chaired or co-chaired six international conferences in Brazil, US, China and Canada. Dr. Inyang is a member of a number of Professional Societies, and has recently completed service as Chairman of the SAB's Environmental Engineering Committee (EEC).

Dr. Inyang received a Ph.D. in Civil and Construction Engineering from Iowa State University, an M.S. and B.S. in Civil and Environmental Engineering from North Dakota State University, and a B.Sc. in Geology from the University of Calabar, Nigeria.

**Dr. Wayne M. Kachel** is a senior pollution prevention engineer with MELE Associates, a consulting firm in San Antonio, Texas. Dr. Kachel recently re-located to the Rockville, MD area. His activities involve developing innovative programs to implement private industry best practices through the U.S. Air Force environmental management program. In particular, he is responsible for creating a strategic plan to achieve environmental compliance through pollution prevention and the elimination of environmental permits, as well as resolving safety and occupational health issues. He previously was employed with Lockheed Martin Corp. and Exxon Company, USA in Corporate environment, safety and health, as well as environmental compliance. He has developed zero waste water discharge systems for Exxon, prepared RCRA permit applications, and published a corporate bioremediation guide, established API's Land Treatment Technical Task Force. He is the holder of a patented reuse process. He has designed environmental technologies for the synthetic fuels process, and has dealt with numerous ground water issues. He serves on the SAB, having chaired an SAB Subcommittee on developing innovative risk reduction methodology as a part of the Integrated Risk Project, a Subcommittee that reviewed the Agency's Superfund Innovative Technology Evaluation (SITE) Program, and

other efforts, such as the Hazardous Waste Identification Rule (HWIR), as well as aspects of the Clean Air Act Section 812 benefit-cost study. His publications cover topics such as environmental compliance, pollution prevention, cost and risk reduction via compliance through pollution prevention, cost-effective environmental, occupational health and safety management at federal facilities, identification, development and selection of risk reduction options, the fate of hydrocarbons during oily sludge disposal in soil, and waste reuse and recovery in the petroleum refining industry.

Dr. Kachel has a Ph.D. and M.S. in Environmental Systems Engineering from Clemson University and a B.S. in Mathematics from Waynesburg College.

**Dr. Alan J. Krupnick** is a Senior Fellow and Director of the Quality of the Environment Division at Resources for the Future. He is widely published in the areas of cost-benefit analysis and instrument design, with research on such topics as: the value on reduced morbidity and mortality, issues associated with revision of ozone and PM standards, optimal adders for environmental damage by public utilities, social costing of electricity, global warming and urban smog, alternative fuels, the external costs of nuclear power, measuring the effects of urban transportation policies on the environment, weighing environmental uncertainties, the benefits and cost of Superfund cleanups and many other related topics. He has served as Senior Economist in the Council of Economic Advisors (1993-94), consultant to US AID, World Bank, Health Canada, the European Commission, the Harvard Institute for International Development, the US Congressional Office of Technology Assessment, the University of Missouri, the State of Maryland, the National Commission on Water Quality and other organizations. He has provided expert testimony to the U.S. Congress on implementation and enforcement of the Clean Air Act, the Regulatory Reform Bill in Congress, reforming Superfund risk assessment, cost-effectiveness and cost-benefit analysis and related topics. Dr. Krupnick has been a reviewer for over a dozen journals in the topics of valuation, cost-benefit analysis and related topics. He is currently serving on several Panels organized by the National Academy of Sciences' Transportation Research Board, and has served on many other expert committees, including one from the Royal Society of Canada on the socioeconomic analysis of possible Canada-wide ozone and fine particulate standards. He was also a co-chair of a major EPA-led stakeholder process on implementation of new ozone and fine particulate ambient air quality standards.

Dr. Krupnick has his Ph.D and M.A. in Economics from the University of Maryland, and his B.S. in Finance from Pennsylvania State University.

**Dr. John P. Maney** is an environmental consultant, and co-founder of Environmental Measurements Assessment. He has extensive laboratory and field experience on sampling, analytical methods, quality control and quality assurance. He has been involved in technical oversight as an expert witness for sampling and analytical programs in response to civil and criminal litigation and has conducted numerous quality assurance plans, field and laboratory audits. He has published technical reports, chapters in books and technical presentations on topics related to sample collection, analytical protocols, sampling strategies, systematic data quality objective planning, environmental monitoring, characterizing heterogeneous materials, measurement integrity, test methods for evaluation of solid waste, design and implementation of sampling plans for RCRA listing and delisting programs and a variety of other related topics. He chaired the EPA/ASTM Task Group on extremely heterogeneous wastes (ASTM D5956). He

was on the editorial advisory board for *Environmental Testing & Analysis* for approximately 10 years, the ASTM accelerated standards group, and is recipient (2001) of the U.S. EPA Oliver Fordham Award for furthering science in the field. He has chaired US DOE's Hanford's Laboratory Capacity Subcommittee, and ASTM and EPA/SAB Subcommittees. Dr. Maney has a Ph.D. in Analytical Chemistry from the University of Rhode Island and a BA in Chemistry from Salem State College.

**Dr. Glenn E. Morris** is an independent consultant specializing in economic analysis and policy evaluation of environmental and natural resources issues. He is currently leading a group of seven economists to assist sector and technical experts in the development of strategies for examining European Union environmental directives. He was a senior environmental policy advisor at the Harvard Institute for International Development (1994 - 97), and senior economist at the Research Triangle Institute's Center for Economics Research, Environmental Economics and Management. Dr. Morris recently completed a review of environmental benefits studies performed in Central and Eastern Europe and, as part of an environmental action plan task force, helping develop benefits study guidelines for the newly Independent States. He has over 22 years of experience covering air, water, soil, and energy resources, economic regulatory and tort policy instruments, and domestic and international settings. In his work he has used or developed a variety of professional tools, including financial models, numerical optimization, multi-market equilibrium models, and econometric estimation. He has planned and directed over 50 projects, including large, multi-disciplinary projects and smaller projects with a limited staff and short deadlines.

Dr. Morris has been involved development and refinement of a number of functional computer models, such as CGE (a Computable General Equilibrium model), and the FEIM (Fiscal Environmental Integration Model). Dr. Morris' professional experience spans policy and planning, environmental finance, natural resource economics, benefit analysis, benefit-cost analysis, and economic impact analysis. He has been a journal reviewers for at least six journals, including the *Journal of Environmental Economics and Management*.

Dr. Morris has a Ph.D. and M.A. in Economics from the University of Colorado, Boulder, and a B.A. in Economics from the University of Connecticut.

**Dr. Gregory Poe** is Associate Professor in the Department of Applied Economics and Management at Cornell University. His present appointment involves research, teaching, and extension in environmental policy and welfare economics, nonmarket valuation, experimental economics, and nonpoint source pollution policy. Other areas of research have included fisheries management in developing countries, geographical information systems, erosion economics, and technical efficiencies in agricultural production. While on sabbatical leave he recently served as a Visiting Fellow at the Jackson Environmental Institute and the Centre for Economic and Social Research on the Global Environment at the University of East Anglia, United Kingdom. He has published over two dozen articles in refereed journals, a number of research manuscripts, over two dozen monographs, nearly 40 presentations at professional meetings, over 40 extension publications on a broad variety of economics topics, including nonmarket valuation methodologies, contingent valuation, incremental benefits of groundwater benefits, measuring differences in willingness-to-pay, land allocation model to assess welfare implications of a conservation reserve program, connecting taxes and willingness to pay for farmland protection, valuation of groundwater quality, nitrates in groundwater, well testing

programs and exposure and health risk perceptions, the evolution of federal water pollution control policies, and numerous related topics.

Dr. Poe has a recently funded grant through the National Science Foundation with other colleagues on "Ecosystem Values and Surface Water Protection: Basic Research on the Contingent Valuation Method." He also has recently received Hatch funds (from 2000 to 2002) on "Environmental Policy and Agriculture," as well as Hatch funds (1998-2000) for "Analyzing the Conflict Between 'Harm Preventing' versus 'Public Good Providing' Environmental Policies." He has received other funds in the past from NSF, NSF/EPA, Hatch Funds, Niagara Mohawk Power Corporation ("An Analysis of Niagara Mohawk's Green Pricing Program"), USDA, and the University of Wisconsin-Madison for a variety of research activities. Dr. Poe has his Ph.D. in Natural Resource Economics and his M.S. in Agricultural Economics from the University of Wisconsin, Madison. He has his B.A. in Economics from Pomona College.

**Dr. Clifford S. Russell** is currently Professor of Economics and Director, Vanderbilt Institute for Public Policy Studies. He has served on the EPA/SAB Joint Subcommittee on Industrial Ecology and Environmental Systems Management. He has served on a number of prestigious advisory committee appointments in other organizations. For instance, he has served on the National Academy/National Research Council Environmental Research Assessment Committee, 1975-77, the Committee on Steel Research, 1978, the Environmental Studies Board, 1983-85, the Committee on Multimedia Approaches to Pollution Control, 1986-88, the Committee on Water Resources Research, 1988-90, the Panel for the Review of the DOE Environmental Restoration Priority System, Chair, 1992-93, the Committee to Review Risk Management in the DOE's Environmental Remediation Program, 1993, and the Committee on Watershed Management, 1996. He has written or co-authored 8 books on a variety of subjects, including: drought and water supply; residuals management in industry: a case study of petroleum refining; steel production: processes, products and residuals; environmental quality management; freshwater recreational fishing: the national benefits of water pollution control; enforcing pollution control laws; investing in water quality: benefits, costs and risks; and a text book on applying economics to the environment. He has edited 9 books dealing with these and related topics, as well as publishing over 60 articles, nearly 40 notes, comments and reviews, and over 50 other products. He has served as a member of a variety of Governing Boards, including the Board of Trustees of the Environmental Defense Fund (1973-85), and the Tennessee Environmental Council (1989-1996). He is a Past President of the Association of Environmental and Resource Economists, and has served on a number of other advisory and organizing committees.

Dr. Russell has his Ph.D. in Economics from Harvard University, and his B.A. in Mathematics from Dartmouth University.

**Dr. Hilary A. Sigman** is currently Associate Professor in the Department of Economics at Rutgers University. Dr. Sigman has published over a dozen articles and chapters on the economics of hazardous waste, solid waste, toxic substances, and water pollution. Her research investigates questions such as the influence of international spillovers on river pollution, the effects of liability for cleanup of contaminated sites under Superfund, the results of Superfund litigation, the role of public policies in illegal dumping and cross-media pollution, and the design of public policies for recycling. Since 1994, she has maintained a research affiliation (as a

Faculty Research Fellow) with the National Bureau of Economic Research. She currently serves on the SAB's Environmental Economics Advisory Committee (EEAC) and the Editorial Council of the *Journal of Environmental Economics and Management*. She is a recipient of a number of research contracts and grants. She received an NSF research grant (1999-2002) for "International spillovers and water quality in rivers," an EPA/Office of Exploratory Research Grant (1994-97) for "Liability funding and Superfund clean-up strategies," and University of California Toxic Substances Research and Teaching Program Research Grant for "Cross-media substitution in toxic chemical emissions," among others.

Dr. Sigman received her Ph.D. in Economics from the Massachusetts Institute of Technology, M.Phil. in Economics from Cambridge University (England), and a B.A. in Economics and Studies in the Environment from Yale College.

**Dr. Makram T Suidan** is currently Professor in Environmental Engineering at the University of Cincinnati. He was department head from 1995-98. His teaching and research interests encompass the fundamentals of adsorption of natural and synthetic organic chemicals on Granular Activated Carbon (GAC), biological treatment of gas-phase organic chemicals in natural and engineered systems, ultrafiltration membranes in waste treatment, electrolytic reactors for the dechlorination of low levels of contaminants, biofilm reactors, bioremediation of oil-contaminated beaches, physical, chemical and biological remediation of contaminated soils, anaerobic pretreatment of wastewater for the control of VOCs, and research initiatives in the area of environmental infrastructure. He has published over 170 peer-reviewed journal articles, over 170 conference proceedings, 250 conference presentations, and over a dozen contributions to textbooks. He serves on a variety of national association committees and panels, such as Chairman of the Distinguished Lecturer Committee for the Association of Environmental Engineering Professors (1996-2001); Chairman of the Program Committee (1992-96), Standard Methods Committee (1984-present), and Research Symposium Committee (1985-96) for the Water Environment Federation, and Editor of the Journal of Environmental Engineering (1987-2001) of the American Society of Civil Engineers (ASCE). He currently is a consultant to the Science Advisory Board's (SAB) Environmental Engineering Committee (EEC). He has served as a member of Science Advisory Committees for EPA Regions 7 & 8, the Texas Oil Spill Program, and the Water Environment Research Foundation (WERF) for advances in gas-phase emission reduction and/or control. He served as a Career Award Panelist for the National Science Foundation and the Natural Sciences and Engineering Research Council of Canada. He has been involved in a variety of consulting activities with over 20 different organizations on topics ranging from computer simulation and process design, a variety of wastewater treatment practices, soil contamination as an expert witness, interpreting adsorption data, and related topics.

Dr. Suidan has a Ph.D. and M.S. in Environmental Engineering from the University of Illinois and a B.S. in Civil Engineering from the American University of Beirut.